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ABSTRACT

Eleven residents of New Hampshire, representing business, education, parents, and state government, visited eight high schools in the state to determine if differences in school budgets affected the quality of education. Members of the study team spent one day in each school and weighed data on staffing, educational opportunities and results, teaching loads, and dropout rates. They compared low-expenditure with high-expenditure schools through statistics and observations. They found that although school quality may be enhanced by such factors as community values, administrative leadership, and faculty commitment, more financial support for a school generally leads to more and better educational opportunities for students--a condition that in turn leads to better educational quality. Included are descriptions of each of the high schools visited and a compilation of comparative data. (JW)

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DOES MONEY MAKE A DIFFERENCE IN THE QUALITY OF HIGH SCHOOL EDUCATION?

A Report by Twelve New Hampshire Citizens
Based on Visits to Eight Public High Schools

March, 1984

Center for Educational Field Services
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EA 016 475

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DOES MONEY MAKE A DIFFERENCE IN THE QUALITY OF HIGH SCHOOL EDUCATION?

Summary of Findings

Eleven New Hampshire citizens representing business and industry, higher education, parents, public and private schools, and state government visited eight high schools throughout the state in the fall of 1983 to seek information on the question: "Does money make a difference in the quality of high school education?"

The purpose of this report is to state what we saw and how we feel about what we saw. It is our opinion, having talked with teachers, parents, students, and administrators in the eight high schools, and having visited many classrooms, that students in some school districts are achieving a level of excellence in education to which many other schools in our state and throughout the nation aspire. But we are gravely concerned that in some of the low spending schools we visited, students are not being afforded educational opportunities that will enable them to face the challenges of our increasingly complex technological society.

Although there are several non-monetary factors that also influence school quality, it is our belief, based on what we saw, that money makes a significant difference in determining the quality of high school education in schools of comparable size. A summary of our major findings concerning monetary factors follows:

1. Schools will face increasing difficulty attracting and holding the best teachers and principals. The teachers are subsidizing the schools. The problem is especially serious in the low expenditure schools where many teachers have a second job in order to continue teaching. This takes teacher time and energy from education at a time when the schools need their help more than ever.

2. Because other careers have become more desirable there is a continuing decline in the number of talented, dedicated persons preparing to be teachers. This is especially true of women, who now have a very wide range of attractive career choices. Thus, competition for teachers will increase and the low expenditure school districts will be even less able to compete for the best.

3. Schools with low expenditures tend to be in communities where educational expectations are also low. Local traditions, values, and cultural patterns do little to reinforce and extend

the academic goals of the school. Yet it is the schools in these communities that are least able to compensate for these limitations.

4. Schools with low expenditures are limited in virtually every dimension -- a narrow range of subjects taught, inadequate instructional equipment, insufficient supplies, poor physical facilities, and unsatisfactory working conditions for students and teachers. These problems are especially serious in the smaller, low expenditure schools, although economies of scale make it possible for larger, low expenditure schools to respond effectively to some of these limitations.

5. By the few measures available, educational attainments of students in low expenditure schools are below those of students in the high expenditure schools.

The major non-monetary factors that are important in a quality school are:

a. Community and family values

b. Administrative leadership

c. Faculty expectations, commitment, and quality.

I. Introduction

The eight high schools we visited were selected in consultation with officials in the State Department of Education so there would be four "matched pairs." Each pair had to be of similar size, with one spending considerably more per pupil than the other. The high schools are:

School	High School Enrollment	1982-83 Per Pupil Costs*
Concord	1120	$3229
Spaulding (Rochester)	1129	2017
Con-Val (Peterborough)	721	3031
Merrimack Val. (Penacook)	643	1856
White Mtn. Reg. (Whitefield)	450	3177
Raymond	420	2428
Hopkinton	272	2956
Farmington	321	1702

Concord and Spaulding High Schools have grades 10-12. Several schools have students in other grades in the building; the per pupil costs are for high school only. (Merrimack Valley Regional and Hopkinton High Schools also house grades 7-8; Raymond, grades 6-8; Farmington, grades 1-6.)

The School Study Team met in Exeter in August to plan the visits, participating in discussions led by three national experts: Dr. Gordon Cawelti, Director of the Association for Supervision and Curriculum Development, Arlington, Virginia, who is conducting a national study of high schools; Harold Howe of Harvard University, former U.S. Commissioner of Education; and Dr. Arthur Wise of the RAND Corporation, a national expert on school studies. Principals and Superintendents from the eight high schools described their schools. We set dates for the school visits.

*Per pupil costs include all operating expenses except capital outlay, transportation, and debt obligations. Based on 1982-83 MS-25 form submitted to State Department of Education.

Members of the Study Team spent a full day in each high school. A typical day included a complete tour of the school with visits to classrooms and separate discussions with four groups selected by the principal: teachers, students, parents, and administrators. We often talked with individual students and teachers as we walked through a variety of classes including science, mathematics, English, social studies, foreign languages, business, industrial arts, home economics, art, music, and in the larger schools, vocational areas. Additionally, we considered extensive documentary data supplied by each school concerning educational opportunities and results, staffing arrangements, teaching loads, drop-out rates, and similar relevant information.

II. Findings from School Visits

To the extent that the work of the schools and teachers is as much art as science, so too will be efforts to judge the quality of schools. The Study Team defines quality education as the extent to which a school contributes to the academic, vocational, cultural, and personal development of students. One can measure accurately many aspects of schooling--length of school day, courses required for graduation, contents of the school library, teachers' salaries, SAT scores, and a multitude of similar matters. For the most part, such information tells us much more about educational opportunities than educational quality.

Through observations, interviews, and examination of documents, we formed impressions of school quality. While the judgments reached are subjective, they are nonetheless significant because they represent the combined efforts of a diverse, conscientious, and capable group of citizens.

The central question guiding the visitors was: Does money make a difference? Are there identifiable differences in the quality of education in the schools that are the result of the level of financial support the school received?

The schools visited vary widely regarding the scope of the curriculum and the working conditions for teachers and students. These differences among the schools are caused by many different factors, and money is definitely one of them. Four important non-monetary factors influence educational quality in the schools we visited. These factors are related to the level of financial support only in ways that are indirect and diffuse, and are discussed first. We will then discuss findings that establish more direct relationships between levels of financial support and educational quality.

Non-Monetary Factors Influencing School Quality

(1) Family and Community Influences

Each school reflects the cultural traditions, values, and expectations of the community that supports it. In three out of four cases, the schools receiving the highest levels of support are located in communities with a larger proportion of well-educated professionals, communities which tend to rank higher in their local property base and in median family income. These communities value education, and have the ability and desire to pay for it. Not only is this reflected in higher expenditures per pupil. The general environment of the home and the community expands and reinforces the educational development of the students; the expectations held for both the schools and the students place greater emphasis on formal school learning, on cultural as well as utilitarian outcomes, on preparation for college, and on a career in the professions.

On the other hand, in communities where the level of financial support is lower, these characteristics are much less evident. As a consequence, in

communities where the family is less likely to encourage educational achievement the schools are less able to compensate for this because resources are seriously limited.

(2) Administrative Leadership and Faculty Commitment

Our study emphasized once again the extraordinary importance of good leadership and dedicated teachers. Our school visits convinced us that both the high spending and low spending schools generally receive vigorous, positive, concerned, and optimistic leadership from the principals and the administrative staffs. Repeatedly, the teaching faculty in the lower spending schools emphasized that such leadership, especially from the principals, is what keeps them going in the face of limited resources, community indifference, and impoverishing salaries. Especially in the poorly financed schools the educational program is in effect heavily subsidized by teachers and others who hold second jobs to offset sub-standard salaries. (One teacher said, "I have to moonlight to support my teaching habit.") Through this exploitation of conscientious educators, such communities have better schools than they actually pay for. How much longer can this continue? Teacher turnover and rapidly developing shortages of teachers may soon end this situation. Effectiveness that depends heavily on loyalty, altruism, and self-sacrifice by the principals and teachers is effectiveness built on a fragile base--one that offers limited promise for the long term.

The quality of schooling will be determined by the quality and commitment of the professional staff of the school. If a school is to be excellent it must have an excellent staff. Inevitably, money will make a difference in the extent to which schools can respond to the increasing demand for excellence.

(3) Current Trends

Once again education is serious business that commands public attention and is a matter of public concern. We saw much evidence that change for the better is underway. In fact, much of the change began several years ago. Discipline is better; graduation requirements are increasing; community interest and support is growing; academic standards are moving up.

These developments are evident in all schools, although the higher spending schools clearly are doing more with formal curriculum development, competency testing, and staff development.

In short, local, state and national attention directed at education has quickened the general pace of educational improvement.

(4) Economies of Scale

Without arguing that "big is beautiful," we noted that the four larger schools (600-1200) tend to provide a wider range of educational opportunities than smaller schools, with the higher spending larger schools providing an excellent educational program for all students. Larger schools offer a wider variety of courses, a greater diversity of co-curricular activities, and more often can assign teachers to teach just their own specialty. Schedule conflicts depriving a student of an opportunity to take a desired elective

course are much less frequent. We believe that the range and type of educational opportunities clearly affects the overall educational quality of high schools. Of concern to us is the inability of the smaller, lower spending high schools to provide programs for general students and to meet the range of needs and interests of college preparatory students. The regional vocational programs are intended to meet the needs of students desiring vocational training.

Money As a Factor Influencing Educational Quality

Because many factors combine to influence the quality of a school, it is especially difficult to separate out the specific effect of any one factor, even one as important as the level of financial support the school receives. Despite such complications, we found indications that well financed schools generally are of higher quality than poorly financed schools and that specific differences result from different levels of financial support.

(1) The Professional Staff

Perhaps the single most important influence on the quality of a school is its professional staff. Although the educational level and experience of professionals are not precise indicators of quality, they are related. In the more affluent schools visited, about three times as many teachers held advanced graduate degrees and almost twice as many had 10 or more years of teaching experience. Teacher turnover is twice as high in the poorly supported schools and in one extreme situation reached an almost 50% turnover rate in a single year. It is common to hear the complaint "we are just a training ground for the better paying schools." And, indeed, the data suggest that is precisely the case.

All of this emphasizes that human resources, the critical component of school quality, are mobile. To a considerable degree, they move according to economic considerations and opportunities for professional accomplishment.

Yet it is appropriate to note that even the low spending schools have so far been able to retain a nucleus of altruistic, talented teachers. Repeatedly we heard how dedicated teachers, working with unusual principals, make special, even extraordinary, efforts to understand and teach the students in their schools. The indicators are that this is done as effectively as might be hoped, given the low level of financial support. But serious concerns remain. For example, in one poorly financed school we learned that 18 of 22 teachers have a second job just to make ends meet. Earlier we pointed out that much of the quality of the less affluent schools must be credited to those dedicated professionals who quite literally subsidize the schools of the community through their own economic sacrifices. This is not the route to educational excellence in the future. In many cases, it was women who made the sacrifice to teach despite the lower salaries, and today such women are finding other, more lucrative jobs. New generations of idealistic teachers are unlikely to appear in sufficient numbers because other careers are readily available and more attractive. Consider, for example, that a recent national study showed teachers in New Hampshire experienced a 27 percent loss in purchasing power over the past ten years. This is the worst decline in all of the 50 states.

(2) School Facilities

The differences in the quality and versatility of the physical plant, the school buildings themselves, are immediately apparent. We found that the lower spending, small high schools (less than 500 pupils) lack adequate facilities for science, industrial arts, business education, and the like. Various threats to the safety of the students are more evident in these schools. Further, the facilities that are available tend to be overcrowded, unsightly, and generally less functional than those in the better financed schools.

In one low spending school, even a relatively new building illustrates the consequences of bare bones financing. Structural limitations have resulted in poor ventilation, uneven heating (coats in one area, shirtsleeves in another), unacceptable noise levels, and similar problems.

Physical plant limitations are not necessarily a decisive weakness. Teachers and students find ways to cope with such annoyances. Nonetheless, this diverts time and energy that can be better used. And it sets a general intellectual and educational tone that tells students education is not among society's highest priorities.

(3) Working Conditions

Teachers in the low spending schools must deal with unfavorable working conditions. More often they teach a greater variety of courses thus requiring more preparation time. They receive less supervisory assistance. They receive less support for curriculum development or professional staff development. And, as will be described in a moment, they work with much more limited instructional resources.

Workloads can be unbelievably burdensome, as in the case of the art teacher in one of the less affluent schools who must teach art to over 1000 students (grades 1-12) each year! Contrast this with the situation in one of the better supported schools that provides not only a modern language laboratory but a full-time lab teacher who supervises the completion of the language study assignments given to the students by the foreign language teachers.

The most unfortunate aspect of such limitations is that this has been true for so long in the low spending school districts that even a vision of real educational excellence is dulled. Too readily, the teachers and citizens settle for accomplishments that are only partial solutions to the total problem. For instance, two of the less wealthy districts recently emerged from a period of double session schooling. The "progress" this represents is a source of great satisfaction, so great that it obscures more important possibilities that remain unrealized. Thus, any restless desire for a better school is largely neutralized by the sense that "we certainly are doing as well as anyone can expect." Pride in accomplishments in the face of adversity seems to be a substitute for solid steps toward educational excellence.

(4) Instructional Resources

The disparity of instructional resources between higher and lower spending schools is equally striking. Although not everything is totally satisfactory in the higher spending school districts, they are more likely to have an adequate supply of up-to-date textbooks, modern equipment for business education, ample equipment for the science program, instruments for the school music program, a good school library, word processors, and similar state-of-the-art equipment.

Again, let us illustrate. In one school with low financial support we were told that one student accidentally spilled a chemical needed for her chemistry experiment. As a consequence, she could not do the experiment. Budget restrictions had limited purchase of chemical supplies to a rock bottom minimum, and there was no more available. But, at one of the schools with a high level of support, we heard the science teacher remind his biology class that the compound microscopes they were about to use were highly sensitive instruments costing over $700 each. The probability that one science program is more effective than the other is impossible to deny.

In vocational education, state and federal funding has provided a dramatic equalizing effect. The state's "twenty center plan" has opened up excellent vocational training programs* to students irrespective of local financial ability and effort. It takes little imagination to envision the educational gains that would follow if the same state and federal commitment were made on behalf of the sciences, arts, mathematics, and the humanities. On the other hand, we are concerned over the lack of space for students from sending districts in some of the regions, and the excessive time students spend in transportation to and from the centers.

(5) Educational Standards and Accomplishments

Specific comparisons of educational standards and accomplishments are difficult to make because very few common measures are used by every school. In fact, once one gets past the traditional "basics," schools vary in the central objectives they emphasize, making comparisons even more difficult.

However, a few common measures, available from almost all schools, offer a partial picture. Although there is some disagreement on the use of SAT scores to measure school quality, it is interesting to note that in the better financed schools, a higher proportion of students take the Scholastic Aptitude Test (SAT) and, on average, score higher on both the verbal and mathematics tests. During the past three years the average SAT scores on both verbal and mathematics tests have been higher in those schools with the greater per pupil expenditures. And this is achieved with approximately 75% more students in the higher expenditure schools taking these tests.

*The state pays for building and equipping the vocational center, and pays 75% of the tuition and all transportation costs for students from "sending" districts to the host center.

Students from better financed schools are more likely to continue their schooling after high school graduation. For each matched pair of schools, a substantially higher percentage of graduates of the better financed schools went on to four-year colleges and a substantially higher percentage continued on to any form of post-secondary education. At the same time, the higher spending schools have a lower drop-out rate.

Despite state-level policies regarding "educational accountability," schools in both categories had little tangible evidence regarding any other measures of educational effectiveness. Only two of the schools have an organized testing program. One school with higher financial support described an organized and apparently well managed program of minimum competency testing, with graduation depending on scoring well on such a test. One of the low spending high schools administers an achievement and proficiency exam to all juniors. Over the past three years, its students have scored at about the national average.

Thus, the few direct and indirect indicators available indicate that the better-financed schools get better educational results.

Earlier in this report we emphasized the overwhelming evidence establishing the point that educational <u>opportunities</u> are considerably greater in the well-financed schools. Although the evidence concerning educational <u>quality</u> is less comprehensive, the visits and the other data all suggest that quality is better in schools where opportunities are greater.

It is important to keep another point in mind. We do not imply that it is impossible to get a good education in a school receiving low financial support. Given sufficient talent, motivation and encouragement, it is possible that a student will fare reasonably well in such a school. But the risk that the student will <u>not</u> realize his or her fullest potential quite clearly is greater, especially in the smaller, low spending schools.

<u>Conclusions</u>

In summary, we point out, first, that school quality is a consequence of many influences. Money is definitely one of these. Community and family values; administrative leadership; faculty expectations, commitment and quality; the range of educational opportunities; and school size are also key factors that influence school quality. Second, we report that our visits and our study decisively support the conclusion that higher levels of financial expenditures for a school lead to more and better educational opportunities for students and these, in turn, lead to better educational quality. Thus we conclude that money wisely used makes a difference in the quality of high school education.

Next Steps

Although this study did not examine the statewide organization of schools and the cost effectiveness of public education in New Hampshire, there may be opportunities for more efficient use of scarce educational resources. For example, one member of the Study Team, Fred Kfoury of Manchester, wrote:

> During the course of the study, I visited six high schools and found such vast differences in the organizational structures that I have many questions regarding the efficiency of our public school system. For example, Concord has its own superintendent of schools for over 4,000 students. Penacook, a ward in the city of Concord, is part of the Merrimack Valley Regional School District. Its superintendent has two other school districts, Andover and Shaker Regional. Hopkinton shares a superintendent with five other school districts, between Concord and Keene. Farmington's superintendent works with eight school districts which have three high schools.
>
> While our study concentrated on the use of money in high schools, superintendents have the overall responsibility for management of public funds under the direction of each school board. How can a superintendent provide for cost-effective schools when there are such differences? The smallest school administrative unit in New Hampshire is Moultonboro, with about 400 children in grades 1-12. The largest is Manchester, with over 13,000 children.
>
> The last time the legislature did a major overhaul of our state's school organization was 1919. I believe it is time to carefully study the current system to be certain it provides cost-effective services needed for modern times, and look forward to this work over the next few months.

Accordingly, in the next several months we plan to study the current structure, organization, and financing of elementary and secondary education in the state. Further, we will develop recommendations on what must be done to achieve greater excellence and equity in our schools. We plan to expand the Study Team to help work on these tasks, and report to the public this summer.

The Study Team expresses its appreciation to the staff, students, and parents of the eight high schools who gave freely of their time to meet with us. Special appreciation is due each superintendent of schools and principal, who provided us with a great deal of information and were 100% cooperative in all parts of our study.

(Funds for this study were provided by a grant from The Kettering Family Foundation.)

APPENDIX

A BRIEF DESCRIPTION OF THE FOUR MATCHED PAIRS

The following is our attempt to give the reader a "snap shot" of each school as it appeared to us on the day of our visit. We recognize that the impressions and feelings one gets on a particular day may be unlike those on another day. Yet, through our questions in the interviews with parents, teachers, students, and administrators, we probed into the ongoing life of the school. We have not attempted to write everything we learned about each school, but rather to highlight the major findings.

A. Farmington-Hopkinton

Of all the schools visited, the sharp contrast between Farmington and Hopkinton stands out above all others on the "does money make a difference" question, leading Study Team members to conclude that the differences in educational quality are more evident in smaller schools.

Hopkinton is a first rate small high school with an outstanding commitment to excellence in education supported by a high ability to pay through a strong local property tax base and citizens with above average median family income. Last year the school spent nearly $3,000 per pupil. It has small classes (average 12.0 pupils per teacher), an excellent college preparatory program with advanced courses in the major subjects including AP (Advanced Placement)* calculus, five years of German, four of French, and AP science. Students desiring vocational courses are bussed to Concord High School's new vocational program, a 25 minute ride. Nearly 70 per cent of its graduates go on to further education, with more than 50% to four year colleges and universities. 48% of its teachers hold a masters degree, and nearly 60% have taught there at least ten years. There is very little teacher turnover. The Study Team was impressed with the high morale of students and teachers, the up-to-date texts, ample supplies and equipment, the modern and well stocked library, etc. The school has a mini-computer with ten terminals; four memory typewriters and 42 electric typewriters. Selected programs on public television are videorecorded for classroom use. Five department chairman have released time for staff and program evaluation and development. The school has an excellent teacher evaluation system where all teachers have formal evaluations at least four times a year. $5,000 was provided the staff for summer work on curriculum development.

*AP = Advanced Placement. Successful completion of an AP course results in the students' earning college credit while still in high school.

Hopkinton parents reported no problems with the educational program; on the contrary, they are very pleased with the excellent college preparation the students receive, the opportunities for the general students, and the vocational center in Concord. Their major concern is the need for better communications with the community at large on what the school is doing, and the need for a superintendent who can give more time to their school district. The superintendent is shared with five other districts, stretching between the Concord and Keene areas (Hopkinton to Stoddard). Teachers and students are equally enthusiastic about their school. The major need the teachers expressed was for a more frequent updating of texts; students expressed the need to improve the physical appearance of the school, especially its cleanliness, and also questioned the value of the ten minute break each morning. The administrators echoed the students' concern about the appearance of the building, and added the need to provide access for the handicapped.

Farmington stands in sharp contrast to Hopkinton. It is a high school with severe problems yet with a staff dedicated to doing the very best for the students with the few resources available. Farmington is well below average both in property wealth and median family income. Its equalized school tax rate is nearly the same as Hopkinton's ($13.43 vs. $15.06) yet it spent 42% less per pupil enrolled in high school last year ($1,702 vs. $2,956). Money clearly makes a major difference in educational opportunities when contrasting the two schools. The pupil teacher ratio is 16:1 in Farmington. The school offers fewer college prep opportunities. One person teaches chemistry, physics, geometry, algebra, advanced math, and computer science. He "is" the majority of the math-science program. An average of 34.5% of Farmington's graduates have gone on to further education, but only 13.4% to four year colleges and universities. The school offers four years of French but only two years of Spanish. 35 students travel daily each way to the vocational center at Somersworth. There has been a great deal of teacher turnover: 45% last year and between 22-27% the prior two years. Only 10% of the teachers have a masters degree, and 1/3 have ten or more years experience. Of particular note to the Study Team is the lack of supplies and equipment. There are twenty typewriters in the business department, ten electric and ten manual, and half are not working properly. There is no memory typewriter; the school has five micro-computers purchased with federal funds. The typing tables are so small that the carriages often knock the typing books on the floor. There are no office practice machines, and no word processor, whereas Hopkinton has ample modern equipment. The home economics teacher told us the town used to replace one of the 14 sewing machines yearly but had to stop three years ago because of lack of money. Nine of the machines are 23 years old, valued at $25.00 each.

The industrial arts teacher reported some of the shop machines are held together by baling wire. The gym is used for grades 1-6 and 9-12 at the same time with no curtain or net to separate the groups. The stage on one end of the gym is used for a study hall once a day and serves as the school cafeteria. It is very crowded at meal time. Two storage areas off the stage next to the kitchen were converted to a guidance office and a resource room for handicapped students. 50% of the students qualify for a free or reduced price school lunch. The chemistry-physics (etc.) teacher reported the

shortage of lab supplies is so severe that when a student spills a chemical given him/her for an experiment, there is no extra and the student can not do the lab work.

Farmington parents stressed the need for a separate high school (the building houses grades 1-6 and 9-12) with up-to-date equipment in all departments. They believe the teachers are grossly underpaid. The teachers also stressed the need for adequate space and equipment for teaching. Nearly all the school's 22 teachers hold a second job to earn enough to stay in teaching. They expressed deep frustration over the current teaching conditions. Many stay mainly because of the leadership and dedication of their principal. There is little custodial help; if a student is sick, a teacher or student has to clean the floor. The basketball coach has to wash the gym floor. Farmington's students were equally concerned, describing laboratory equipment, desks, chairs, and blinds falling apart; heat turned off in March to save money; confrontations on the gym stage where students eat lunch because of the crowded conditions; inadequate library; and more. The administrators echoed the need for better facilities and equipment, and an enlarged library and cafeteria, as well as better teacher salaries and staff development funds.

B. Raymond-White Mountains Regional High School

Raymond and the White Mountains Regional High School provide an interesting contrast in the "does money make a difference" study. Although Raymond has a lower tax base and much higher tax rate, its median family income is somewhat higher than WMRHS; yet it spends significantly less per pupil ($2,428 vs. $3,177 in 1982-83). The visits demonstrated once again the difference money makes in educational opportunities and resources.

WMRHS shows what a number of small towns can do to improve education when they band together to form a regional school district and build a new regional high school. Five small school districts in the Whitefield-Lancaster area formed the White Mountain Regional School District in 1964 in order to provide better education at a reasonable cost. The state encourages regionalization by paying a higher percent state aid for school building construction (55% to WMRHS) than it does in a single district (30% to Raymond). Up until 1979, the state also provided up to $75.00 per high school pupil (and $45 per elementary pupil) per year to regional districts as incentive aid.

WMRHS, in addition to having a relatively new and spacious high school, has a lower pupil teacher ratio than Raymond (15 compared to 21.8 pupils per teacher) and a better trained and more experienced staff. 41% of WMRHS teachers have the masters degree compared to 10% in Raymond; 84% have ten or more years experience compared to 32% in Raymond. However, each sends a similar proportion of their graduates to four year colleges: 22.5% from WMRHS compared to 18.5% in Raymond. (20.7% of WMRHS graduates went on to other than four year colleges compared to only 11.0% from Raymond.)

Parents in the Whitefield-Lancaster area expressed general satisfaction with the school, commenting on the excellent student morale, good discipline, talented staff, and program for the gifted. They expressed the need for a full time guidance director, especially for college and career counseling, restoration of the music program, and better public relations with taxpayers. Students also emphasized the need for a full time guidance counselor, a program in computer education, better art and music programs, and advanced placement courses. They are enthusiastic about the overall "freedom to learn" and plentiful opportunities in the White Mountain Regional High School. To their knowledge, graduates now in college report having had a good solid preparation for college work. Teachers repeated the enthusiasm over the general school morale. They expressed concern over the large amount of equipment obtained from federal funds or donations because of what it will cost the district to replace such equipment. The administrators echoed this concern, believing that local resources have been stretched to the limit to maintain the budget at its present level. The school has 15 micro-computers, three memory typewriters, and 51 electric typewriters. Nine of the micro-computers are on loan from the University System and are also used in the University Continuing Education program.

Raymond presents a striking contrast to the relatively new high school in Whitefield, showing significant differences in the buildings, equipment, and educational materials. Raymond is very crowded, a condition exacerbated by overcrowding in the attached middle school which shares some facilities with grades 9-12. Some of the visitors regard the old wooden structure which houses grades 6-8 as unsafe. We observed extremely poor and inadequate science laboratories, and were surprised not to find the usual safety devices (eyewash, shower). While the industrial arts area has been improved this past year, it still appears inadequate compared to other schools. Raymond has made a strong commitment to provide for its handicapped students, placing further strain on resources of regular education in order to comply with federal and state special education laws. (The Study Team found that each district was affected by these laws; however, schools in the poorer communities often met special education mandates to the detriment of the regular school program. For example, Farmington had appropriated $60,000 to replace some of its old, broken-down equipment this year, but unbudgeted increases in costs for special education forced the School Board to reassign those funds to pay the deficit in special education.)

In Raymond all groups interviewed expressed concern over the inadequate and poor facilities. Parents stated that a new high school must become a top priority for the town, but question the ability of the taxpayers to pay for it. The overcrowded conditions and lack of instructional equipment (especially in science) were stressed by the students. Students expressed concern over losing good teachers. One student reported he had ten different English teachers in the past five years. Several of the college prep students stated they would prefer to go to a high school where they could have more choices in courses. Students reported satisfaction with the new vocational program in Exeter. The administrators stressed the need for better salaries for teachers; improved space, equipment, and textbooks; and funds for staff development.

C. Contoocook Valley and Merrimack Valley Regional High Schools

The Contoocook Valley Regional High School (called Con-Val) serves nine towns in the Peterborough region; Merrimack Valley (MVRHS) serves five towns in the Penacook area. Con-Val has a combination of high equalized valuation per pupil and a relatively high median family income. MVRHS has less than half as much equalized property value per pupil yet its median family income, while lower than Con-Val's, is above state average. Con-Val spent $1,175 more per pupil than Merrimack Valley last year: what is it buying with this greater amount of money, and does the extra money make any significant difference in the education of students? (Con-Val $3031; MVRHS $1856. The equalized tax rates are remarkably similar: Con-Val $11.20; MVRHS $10.85.)

Over one third of the difference in per pupil expenses is in plant operation ($635 vs. $201) and the Study Team saw ample evidence of this. Con-Val has the best overall facility of all eight schools, and it is extremely well kept. The building has ample space for the wide variety of educational programs, department centers with desks and files for all teachers, and department resource areas where students can do in-depth research and obtain extra help in their studies. Built on several levels, the school installed electronic gear to enable handicapped students access to all rooms. The school has an "atmosphere of excellence" which is everywhere; in the vocational department, all academic areas, among students studying in the library, and the department resource areas. Nearly half the students take at least one course in industrial arts, and 30% take at least one vocational course of the seven options. Their science labs are well equipped with the latest materials. The school has 17 micro-computers, one memory typewriter, 32 electric and 28 manual typewriters. The drafting teacher writes textbooks. Students must pass a minimum competency test to graduate. All students must take 5 courses each year and most college preparatory students take at least 6. Teachers demand much of students, with 1 1/2 to 3 hours of homework per night the rule. Music, art, and drama are emphasized. The school has space for teaching gymnastics and a weight room in addition to a large gym. There has been no teacher turnover at Con-Val the past two years, and only 1.6% in 1981-82. The district provided $8,000 for curriculum development at the high school, and $20,000 for system-wide staff development.

Con-Val parents commented on many improvements over the past several years, especially in the school's discipline and increased requirements for graduation. They felt the school's major need is for improved communications, both within the school and with the nine towns in the district. They also noted the need to improve teacher salaries further, expand computer education, and have smaller English classes, especially for teaching writing. Students expressed pride in the "new spirit" that pervades the school. They are very pleased with the quality of education and the excellent teachers. Teachers and administrators also stressed satisfaction with overall school morale and community support.

Merrimack Valley presents a different picture. Teacher turnover has ranged from 12 to 25% per year over the past three years. The building is not well kept and has ventilation problems. The Study Team found the music room to be especially hot and stuffy the day of our visit, but learned such is

commonplace. All agreed the business department is especially outstanding, with six micro-computers, two memory typewriters, 30 electric and 11 manual typewriters. There is a demand for many more micros, for the business and other departments (especially math). The school is tied in with the Concord High School vocational center, yet has enough enrollment to justify having some state-approved programs of its own, as does Con-Val. The Study Team was told there is a shortage of up-to-date texts. Parents and students stressed the need for better teacher salaries so the school would not lose teachers to better paying jobs.

The parents at Merrimack Valley Regional High School believe a major strength of the school is its core of dedicated teachers who have stayed despite low salaries and inadequate texts and equipment. The parents want programs in Latin and German, improvements in the teaching of writing, and an additional guidance counselor. Students decried the high teacher turnover and lack of computers, and said the school needs more sports, especially football. The group of students who met with us seemed to have a low self image and told us student morale in the school is low. Teachers agreed with the need for more extracurricular activities and see this as a way to improve student morale, which they too regard as quite low. They also stated teacher morale is low, that many teachers work extra jobs to stay in teaching. Staff members also noted the need to update instructional equipment and improve funding of staff development programs. They believe the school's department heads should be involved in teacher recruitment and evaluation, and that steps must be taken to reduce teacher turnover. The administrators expressed support for the latter point, calling for better teacher salaries and smaller class sizes. They also advocate a separate high school (grades 7-8 are now in the building), and improvements in the physical plant.

D. Concord and Spaulding High Schools (Rochester)

While the large size of both Concord and Spaulding High Schools (over 1100 students in grades 10-12) make it possible for each school to offer a varied and diverse program of studies, it is clear that money makes a significant difference in the overall staffing, facilities and equipment, and the range of courses as well as co-curricular activities. Rochester has $50,000 less equalized valuation per pupil than Concord ($100,749 v. 151,282), and $1,316 less in median family income. Its equalized school tax rate is about 1/4 lower than Concord's ($12.23 v. $16.84) which accounts for some of the vast difference in per pupil costs ($3229 vs. $2017).

For its higher expenditure, Concord has a better trained staff (59% v. 18% with masters degree) with more experience (87% with ten or more years vs. 67%). 53% of Concord's graduates have gone on to further education compared to 39% in Rochester. The higher percent of better trained and more experienced staff, together with a more diverse curriculum, explains much of the $788 more per pupil Concord spent on instruction and instructional support last year. 79% of Concord's seniors will graduate with at least three full years of math, and 59% with three full years of science, compared to 35% and 30% respectively in Rochester. Concord's vocational center was built by the state and offers 25 courses. Rochester built its own center and offers 16 courses. Rochester offers four years of French, three of Latin. Concord

offers four years each of French, Spanish, and German, and three years of Latin. Rochester has a four year Air Force ROTC program. Concord offers 15 science courses, with advanced placement in biology, chemistry, and physics. Rochester offers 10 science courses with no advanced placement. The following lists the number of courses in other departments:

	Department	Concord	Rochester
1.	Social Studies	20	13
2.	Music	8	3
3.	Mathematics	18 (including AP calculus)	14
4.	English	22	22
5.	Business	15	12
6.	Home Economics	13	9
7.	Art	14	10

Concord parents expressed general satisfaction with the high school. They identified the major strengths of the school to include the outstanding teachers, opportunities for advanced placement courses, the vocational program, learning disabilities program, and the sports opportunities. They believe teacher salaries should be improved. Students, teachers, and administrators join the parents in their overall satisfaction with Concord High School.

Rochester parents are very proud of Spaulding High School. They told the Study Team their high school must pay better salaries to teachers or it will lose the good staff they now have. They also believe the school must offer more foreign languages, increase its guidance services, provide smaller classes, and improve the building. Rochester's students stressed the need for a better extracurricula program, more counselors, and an up-to-date library. Like the parents and administrators, they want better teacher salaries, an improved ventilation system, current editions of textbooks, and ample supplies. Students told us of the old, limited science equipment, shortage of textbooks, and need for additional foreign language courses. One Spaulding teacher stated that many teachers have given up putting in requests for supplies and equipment because they're always turned down. The 1983-84 budget has no increase in those accounts. Yet, the student and staff morale in Rochester is very high. There is a good feeling in the school. The staff is deeply committed to doing the very best with what they have. The Study Team became caught up in the strong esprit de corps which is evident throughout Spaulding High School, and observed the excellent attitude and high morale, important learning ingredients that money can't buy.

The comparative data on the following pages is based on 1983-84 information unless otherwise stated.

COMPARATIVE DATA: FARMINGTON and HOPKINTON

	Farmington	Hopkinton
A. Community/School Data		
1. 1980 Population	4,630	3,861
2. 1982 Enrollment	321	272
3. 1982 Eq.Val /Pupil	$89,427	$152,476
4. 1980 Median Family Income	$16,549	$ 22,009
5. 1980 Median House Value	$33,600	$ 59,600
6. 1982 Eq. School Tax	$13.43	$15.06
B. Student Data		
1. 1978-82 Graduates:		
a. Four Year Colleges	13.4%	50.6%
b. Other Education	21.1%	17.9%
2. 1983 Graduates:		
a. Four Year Colleges	14.0%	65.0%
b. Other Education	24.0%	13.0%
c. Work	40.0%	20.0%
d. Military	17.0%	2.0%
3. 1982-83 Drop-Out Rate	5.5%	0.2%
4. Number Seniors	68	66
a. % With 3 Years Math	40%	52%
b. % With 3 Years Science	35%	65%
c. % With 1 Year Art	34%	6%
5. Class Sections With:		
a. 10 or less	22%	23%
b. 11-20	30%	47%
c. 21-30	46%	28%
d. Over 30	2%	2%
6. Pupil-Teacher Ratio	16.0	12.0

	Farmington	Hopkinton
C. Staff Data		
1. Number Teachers	20.0	22.7
a. % With Masters	10%	48%
b. % With 10+ Years	32%	59%
2. Number Principal/Assistants	1	2
3. Guidance	1	1
4. Secretarial/Clerical	2	3
5. Teacher Salary:		
a. B-MIN	$ 9,325	$ 9,700
b. B-MAX	$16,750	$20,218
c. M-MIN	$ 9,725	$10,850
d. M-MAX	$17,150	$21,938
e. Highest Teacher Salary	$17,150	$22,648
6. Principal Salary	$27,175	$34,939
7. Staff Development Budget	$ 0	$15,891
8. Teacher Turnover Rate:		
a. This Year	45.5%	18.0%
b. 82-83	27.3%	15.6%
c. 81-82	22.7%	15.6%
D. 1982-83 Expenditure Per Pupil		
1. Instruction	$ 1,200	$ 2,116
2. Instructional Support	$ 132	$ 298
3. Plant Operation	$ 232	$ 347
4. Other Support	$ 138	$ 195
5. Total Cost/Pupil	$ 1,702	$ 2,956

COMPARATIVE DATA: RAYMOND and WHITE MTN REGIONAL

	Raymond	White Mtn Reg.
A. Community/School Data		
1. 1980 Population	5,453	7,204
2. 1982 Enrollment	420	435
3. 1982 Eq.Val./Pupil	$99,701	$112,566
4. 1980 Median Family Income	$16,132	$ 15,534
5. 1980 Median House Value	$43,400	$ 31,693
6. 1982 Eq. School Tax	$20.77	$16.15
B. Student Data		
1. 1978-82 Graduates:		
a. Four Year Colleges	18.5%	22.5%
b. Other Education	11.0%	20.7%
2. 1983 Graduates:		
a. Four Year Colleges	23.0%	22.5%
b. Other Education	6.0%	27.0%
c. Work	51.0%	8.5%
d. Military	9.0%	14.0%
3. 1982-83 Drop-Out Rate	24.0%	1.8%
4. Number Seniors	79	96
a. % With 3 Years Math	14%	65%
b. % With 3 Years Science	15%	26%
c. % With 1 Year Art	25%	18%
5. Class Sections With:		
a. 10 or less	10%	20%
b. 11-20	44%	39%
c. 21-30	39%	40%
d. Over 30	7%	1%
6. Pupil-Teacher Ratio	21.8	15.0

	Raymond	White Mtn Reg.
C. Staff Data		
1. Number Teachers	20.0	33.0
a. % With Masters	10%	41%
b. % With 10+ Years	32%	84%
2. Number Principal/Assistants	1	2
3. Guidance	1	1
4. Secretarial/Clerical	2	3
5. Teacher Salary:		
a. B-MIN	$10,450	$10,125
b. B-MAX	$15,290	$14,679
c. M-MIN	$11,578	$10,732
d. M-MAX	$16,418	$17,310
e. Highest Teacher Salary	$17,894	$23,360
6. Principal Salary	$32,600	$26,578
7. Staff Development Budget	$ 4,000	$ 5,315
8. Teacher Turnover Rate:		
a. This Year	N/A	9.0%
b. 82-83	19.0%	10.0%
c. 81-82	25.0%	10.0%
D. 1982-83 Expenditure Per Pupil		
1. Instruction	$ 1,802	$ 2,077
2. Instructional Support	$ 256	$ 191
3. Plant Operation	$ 326	$ 581
4. Other Support	$ 45	$ 328
5. Total Cost/Pupil	$ 2,428	$ 3,177

COMPARATIVE DATA: MERRIMACK VALLEY and CONTOOCOOK VALLEY

	Merrimack Val.	Contoocook Val.
A. Community/School Data		
1. 1980 Population	7,765	13,167
2. 1982 Enrollment	643	721
3. 1982 Eq.Val./Pupil	$108,550	$231,339
4. 1980 Median Family Income	$ 18,691	$ 20,314
5. 1980 Median House Value	$ 41,192	$ 54,538
6. 1982 Eq. School Tax	$10.85	$11.20
B. Student Data		
1. 1978-82 Graduates:		
a. Four Year Colleges	20.5%	41.5%
b. Other Education	17.7%	12.4%
2. 1983 Graduates:		
a. Four Year Colleges	20.5%	39.0%
b. Other Education	17.7%	15.0%
c. Work	43.4%	34.0%
d. Military	8.5%	8.0%
3. 1982-83 Drop-Out Rate	4.6%	4.3%
4. Number Seniors	145	188
a. % With 3 Years Math	43%	46%
b. % With 3 Years Science	19%	26%
c. % With 1 Year Art	18%	21%
5. Class Sections With:		
a. 10 or less	11%	19%
b. 11-20	32%	51%
c. 21-30	56%	30%
d. Over 30	1%	0
6. Pupil-Teacher Ratio	16.8	15.4

	Merrimack Val.	Contoocook Val.
C. Staff Data		
1. Number Teachers	39.2	47.0
a. % With Masters	21%	50%
b. % With 10+ Years	50%	N/A
2. Number Principal/Assistants	3	2
3. Guidance	2	3
4. Secretarial/Clerical	2	7
5. Teacher Salary:		
a. B-MIN	$ 9,396	$10,150
b. B-MAX	$15,592	$14,717
c. M-MIN	$10,044	$10,900
d. M-MAX	$16,329	$17,440
e. Highest Teacher Salary	$16,629	$21,240
6. Principal Salary	$31,700	$28,530
7. Staff Development Budget	$ 5,100	$ 8,000
8. Teacher Turnover Rate:		
a. This Year	12.0%	0
b. 82-83	19.0%	0
c. 81-82	25.0%	1.6%
D. 1982-83 Expenditure Per Pupil		
1. Instruction	$ 1,408	$ 1,980
2. Instructional Support	$ 135	$ 297
3. Plant Operation	$ 201	$ 635
4. Other Support	$ 113	$ 119
5. Total Cost/Pupil	$ 1,856	$ 3,031

COMPARATIVE DATA: ROCHESTER and CONCORD

	Rochester	Concord
A. Community/School Data		
1. 1980 Population	21,560	30,400
2. 1982 Enrollment	1,199	1,120
3. 1982 Eq.Val./Pupil	$100,749	$151,282
4. 1980 Median Family Income	$ 18,360	$ 19,676
5. 1980 Median House Value	$ 41,400	$ 43,200
6. 1982 Eq. School Tax	$12.23	$16.84
B. Student Data		
1. 1978-82 Graduates:		
a. Four Year Colleges	21.0%	36.0%
b. Other Education	18.2%	17.1%
2. 1983 Graduates:		
a. Four Year Colleges	27.0%	33.0%
b. Other Education	23.0%	11.0%
c. Work	30.0%	30.0%
d. Military	10.0%	6.0%
3. 1982-83 Drop-Out Rate	6.0%	5.5%
4. Number Seniors	335	336
a. % With 3 Years Math	35%	79%
b. % With 3 Years Science	30%	59%
c. % With 1 Year Art	60%	70%
5. Class Sections With:		
a. 10 or less	4%	3%
b. 11-20	41%	44%
c. 21-30	37%	49%
d. Over 30	17%	3%
6. Pupil-Teacher Ratio	22.0	21.8

	Rochester	Concord
C. Staff Data		
1. Number Teachers	54.5	52.5 + 15.2 voc ed
a. % With Masters	18%	59%
b. % With 10+ Years	67%	87%
2. Number Principal/Assistants	3	3
3. Guidance	3	4
4. Secretarial/Clerical	4	6
5. Teacher Salary:		
a. B-MIN	$ 9,500	$11,158
b. B-MAX	$16,248	$19,191
c. M-MIN	$10,600	$12,274
d. M-MAX	$18,130	$20,976
e. Highest Teacher Salary	$19,840	$20,800
6. Principal Salary	$29,897	$36,954
7. Staff Development Budget	$ 5,000	$15,000+
8. Teacher Turnover Rate:		
a. This Year	5.0%	7.1%
b. 82-83	5.0%	9.4%
c. 81-82	8.0%	7.0%
D. 1982-83 Expenditure Per Pupil		
1. Instruction	$ 1,469	$ 2,050
2. Instructional Support	$ 104	$ 311
3. Plant Operation	$ 243	$ 493
4. Other Support	$ 201	$ 374
5. Total Cost/Pupil	$ 2,017	$ 3,229

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